

## **CHAPTER 2**

### **PROPOSED ACTION AND ALTERNATIVES**

#### **2.0 PROPOSED ACTION**

The Double Eagle Petroleum and Mining Company (Double Eagle) Proposed Action consists of drilling, completing, and operating eight new exploratory coalbed methane (CBM) wells and related production and water disposal facilities in the Cow Creek Pod project area (CCPA) of the Atlantic Rim Project Area (ARPA)(Figure 2-1). The proposal is a part of the Interim Drilling Policy associated with the Atlantic Rim environmental impact analysis in Carbon County, Wyoming.

The Atlantic Rim CBM Project Environmental Impact Statement (EIS) began in late summer 2001, and is expected to take about 24 months to complete. During the interim period before the EIS is completed, the BLM, Rawlins Field Office (RFO) will allow, with compliance with criteria described in the Interim Drilling Policy (see Appendix A), the drilling of up to 200 exploratory wells. Currently, oil and gas operators have identified 9 areas or “pods” where these exploratory wells would be located, one of which is the CCPA. The Cow Creek pod is actually a portion of pod number six. The remaining portion of this pod is referred to as the Sun Dog pod, which will be developed by Petroleum Development Corporation (PEDCO). Because the Sun Dog pod will be operated by a different company, utilizing separate facilities, with plans to dispose of produced water by re-injection methods, a separate environmental analysis was prepared.

The proposed CBM development is based on a Wyoming Oil and Gas Conservation Commission (WOGCC) approved 40-acre well spacing pattern. In addition to well sites, other facilities, such as access roads, gas gathering and water disposal pipelines, electrical utilities, and compressors, would be developed to facilitate natural gas (methane) production in the well fields. The interim project would develop over a 6 to 12 month period. The productive life of the project is estimated between 10 and 15 years.

Specific components of the Cow Creek CBM project are shown in the Master Surface Use Plan (MSUP) and Master Drilling Plan (MDP) (Appendix C), and summarized in the following sections of the Double Eagle Plan of Operations.

#### **2.1 PLAN OF OPERATIONS**

##### **2.1.1 Preconstruction Planning and Site Layout**

Double Eagle would follow the procedures outlined below to gain approval for proposed activities on BLM-administered lands within the Cow Creek Pod. Development activities proposed on fee (private) surface would be approved by the WOGCC. The WOGCC permitting procedures require filing an APD with the WOGCC and obtaining a right-of-way (ROW) from the surface owner.

Prior to the start of construction activities, Double Eagle would submit a Notice of Staking (NOS), APD, or ROW Application to the BLM with a map showing the specific location of the proposed activity (e.g., individual drill sites, pipeline corridors, access roads, or other facilities). The application would include site-specific plans to describe the proposed development (i.e., drilling plans with casing/cementing program; surface use plans with road and drill pad construction details; and site specific reclamation plans, etc.). Approval of all planned operations would be obtained in accordance with authority prescribed in Onshore

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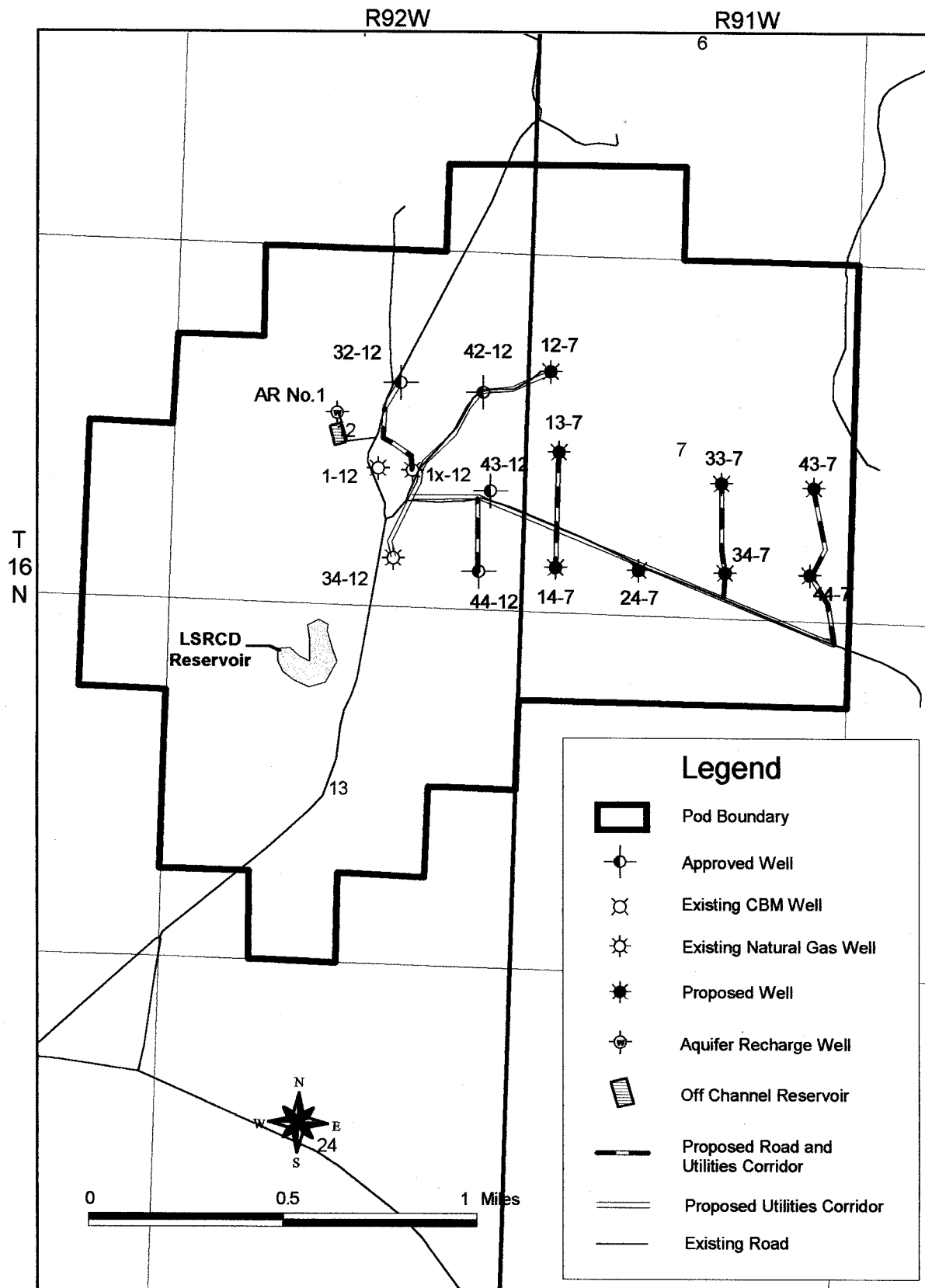


Figure 2-1. Proposed Developments in and Around the Cow Creek Pod.

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Oil and Gas Order No. 1 (Approval of Operations on Onshore Federal and Indian Oil and Gas Leases).

The proposed facility would be staked by the Double Eagle and inspected by an interdisciplinary team (IDT) and/or an official from the BLM to ensure consistency with the approved RMP, the Interim Drilling Policy (see Appendix A), and oil and gas lease stipulations.

More detailed construction plans, when required by the BLM for the proposed development, would be included in the MSUP. The plans would address concerns that may exist concerning construction standards, required mitigation, etc. Negotiation of these plans between Double Eagle and the BLM, if necessary to resolve differences, would be based on field inspection findings and would take place either during or after the BLM on-site inspection.

Double Eagle and/or its contractors would revise the MSUP and MDP as necessary per negotiations with the BLM. The BLM would complete a project-specific environmental analysis that incorporates agreed upon construction and mitigation standards. The BLM would then approve the specific proposal and attach the Conditions of Approval to the permit. Double Eagle must then commence with the proposed activity within one year.

Following is a general discussion of proposed construction techniques to be used by Double Eagle. More detailed plans can be reviewed in Appendix C1, MSUP. These construction techniques would be applicable to drill site, pipeline, and access road proposals within the CCPA, and may vary between the well sites.

### **2.1.2 Construction and Drilling Phase**

#### **2.1.2.1 Access Road Construction**

The primary road access utilized by Double Eagle to access the CCPA is Wyoming State Highway 789 (Figure 1-2). Access to the pod is provided by an existing graveled and partially graveled road off of County Road 608 (Figure 1-2). Access to drill site locations from the existing road network already in place would be provided by new and upgraded crowned, ditched, and surfaced roads.

Double Eagle proposes to construct required new access roads across public lands in accordance with BLM Manual 9113 standards. Roads would be located to minimize disturbances and maximize transportation efficiency. Due to the soil characteristics of the area, surfacing of all newly constructed access roads with an appropriate grade of gravel to a depth of four inches would be completed prior to moving the drilling equipment/rig onto the pad. Certain access roads, or portions thereof, may not need to be surfaced prior to moving the drilling equipment/rig onto the well pad. Factors to be considered here are soil types, grade, and weather conditions that suggest excessive rutting or erosion may not occur without gravel. These access roads, or portions thereof, would be identified during the on-site inspection. Roads would be closed and reclaimed by Double Eagle when they are no longer required for production operations, unless otherwise directed by the BLM.

Drainage crossings on the access routes within the project area would either be low water crossings or crossings using culverts. Where required, fish-friendly culverts would be installed. Low water crossings would be utilized in shallow channel crossings. Crossings of larger channels

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within the project area would consist of excavating an area approximately four feet deep under the travelway and filling it with rock and gravel to the level of the drainage bottom. Channel banks on either side of such crossings would be cut down to reduce grade where necessary. Culverts would be installed on smaller, steeper channel crossings. Topsoil would be saved before channel crossing construction occurs. Also, the total area to be disturbed would be flagged on the ground before construction begins.

### **2.1.2.2 Well Pad Design and Construction**

All of the proposed CBM wells would be drilled on lands administered by the BLM. A graded well pad would be constructed at each well site. Drilling operations on flat terrain would disturb an area approximately 180 feet by 200 feet at each well site.

A diagram showing the proposed drill pad layout is shown in Figure 2-2, and indicates drill pad orientation with cuts and fills. However, the amount of area actually used for the drillsite would be dependent on the drilling rig used. The only grading of the wellsite would be the part of the location where the drilling rig and ancillary facilities are positioned. Within the location dimension, a temporary pit would be excavated measuring approximately 15 feet wide, 15 feet long, and 12 feet deep. The estimated life of the pit would be 2 to 3 weeks to allow for evaporation of pit fluids and would be reclaimed after completion operations. The pit would be fenced and netted to prohibit livestock and wildlife from falling into it.

Where grading occurs, all topsoil up to 12 inches as identified in each site specific EA would be removed from the location, including areas of cuts, fill and subsoil storage areas, and would be stockpiled at the site. If ground frost prevents the segregation and removal of the topsoil material from the less desirable subsoil material, cross-ripping to the depth of the topsoil material would be completed as necessary.

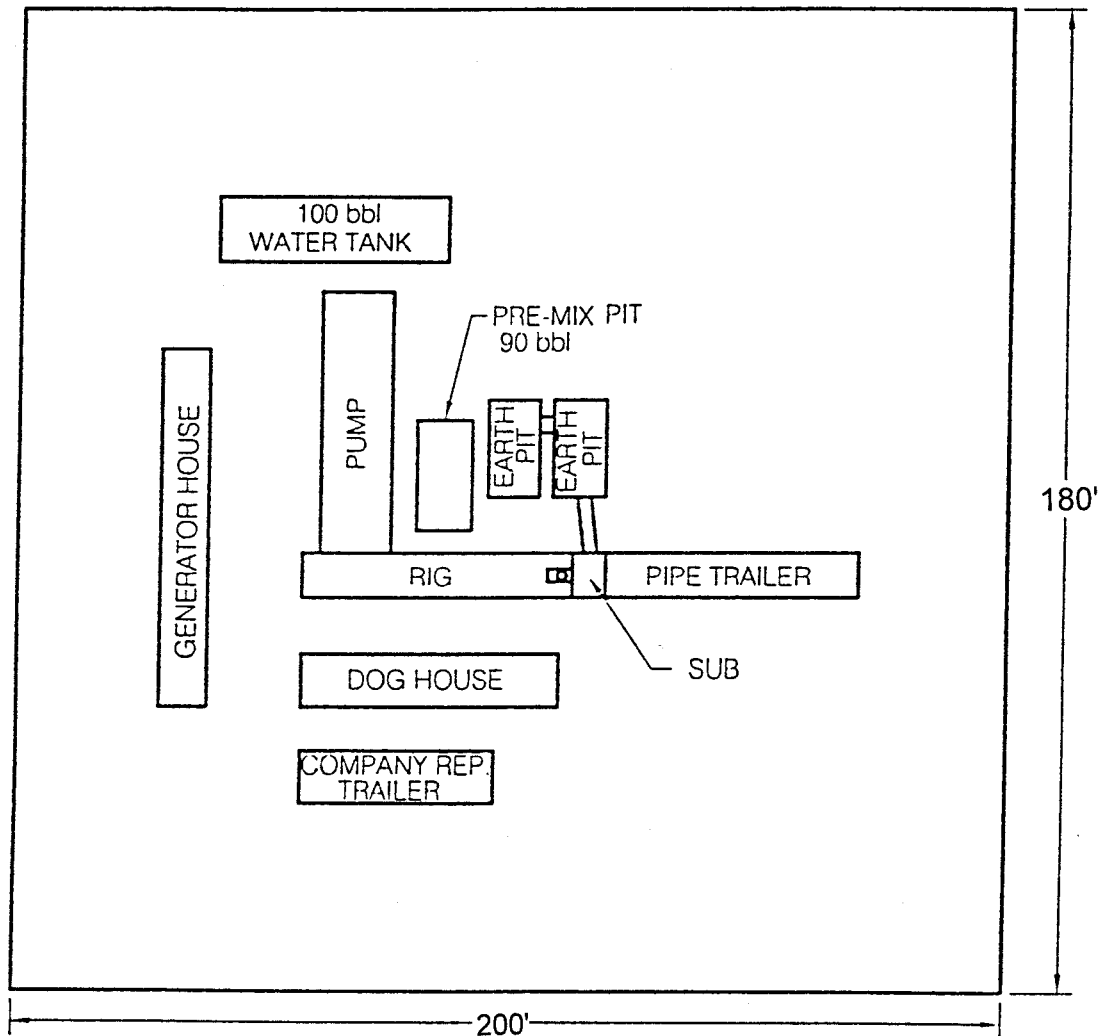
Care would be exercised to make certain that soil materials and overburden would not be pushed over side-slopes or into a drainage. All soil material disturbed would be placed in an area where it can be retrieved. If there is snow on the ground when construction begins, it would be removed before the soil is disturbed, and it would be piled downhill from the topsoil stockpile location.

The backslope and foreslope would be constructed no steeper than 1.5:1. The reserve pit would be constructed with a minimum of one-half the total depth below the original ground surface on the lowest point within the pit. The reserve pit would be fenced stock-tight on all sides when the well is suspended, completed, or abandoned. The reserve pit would be oriented to prevent collection of surface runoff. The pad would be constructed in such a manner as to prevent water from draining across the pad.

In the event drilling is non-productive, all disturbed areas, including the well site and new access road, would be reclaimed to the approximate landform that existed prior to construction. Reclamation and site stabilization techniques would be applied as specified in the MSUP.

If drilling is productive, all access roads to the well site would remain in place for well servicing activities (i.e., maintenance, improvements, etc.). Partial reclamation would be completed on segments of the well pad and access road ROW no longer needed.

## TYPICAL DRILL SITE LAYOUT



NOT TO SCALE

Figure 2-2. Typical CBM Drill Site Layout - Cow Creek Pod.

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### **2.1.2.3 Drilling and Completion Operations**

Drilling would determine whether CBM gas production is possible and economic. The CCPA is located in the Washakie Basin on the west flank of the Sierra Madre uplift in Carbon County. The primary targeted reservoir for the project is CBM gas from the coal seams within the Almond Formation, a member of the Upper Cretaceous Mesaverde Group. Double Eagle bases this proposed activity on their preliminary development plans submitted to the BLM in 1999.

Double Eagle has received approval from the WOGCC for 40-acre spacing on this project (WOGCC Docket #233-2001). This spacing is viewed by Double Eagle initially as the most warranted spacing since this area has only one producing CBM well and therefore no reliable reservoir data exists to date.

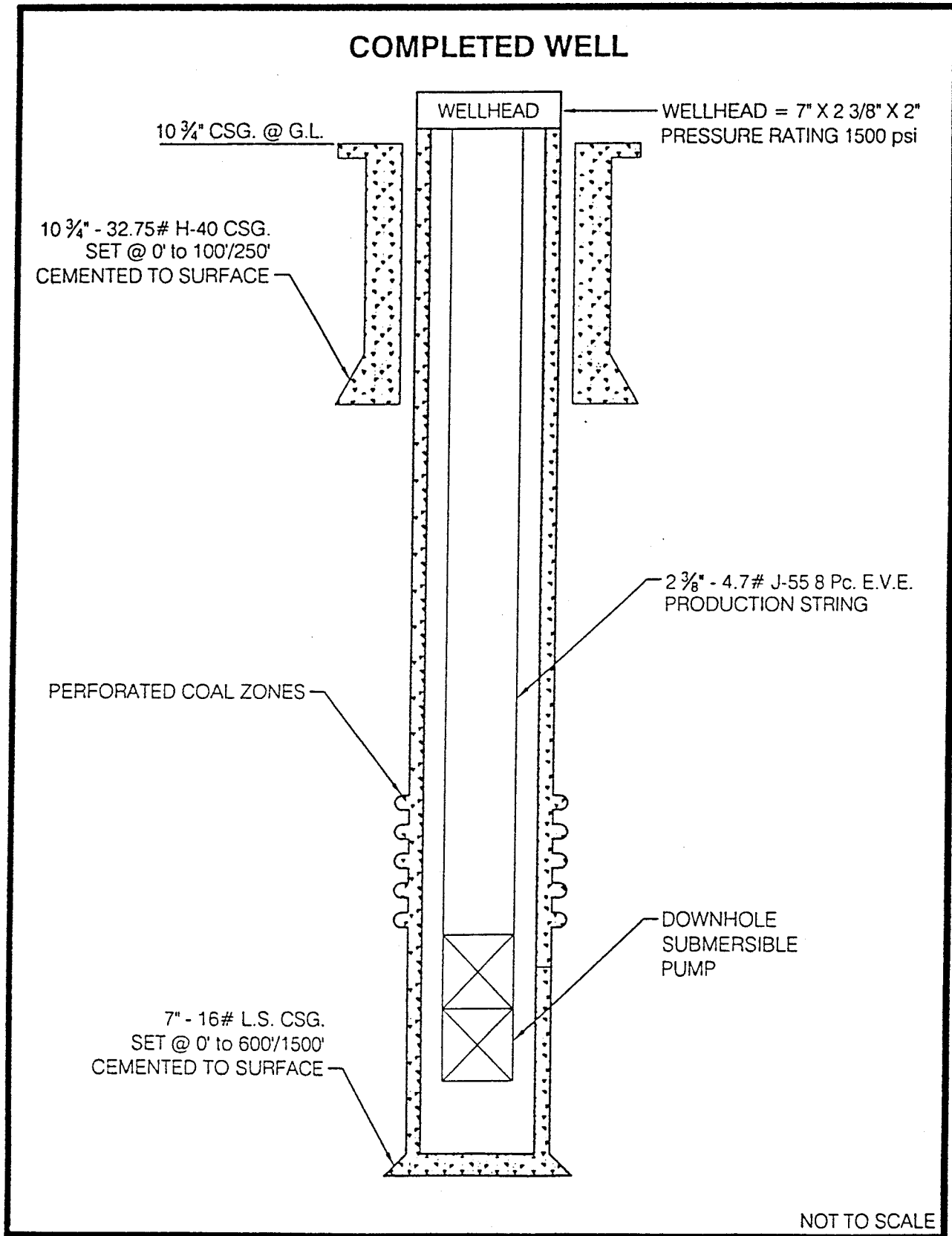
Drilling of the CBM wells would utilize a truck or trailer-mounted drilling rig. Additional equipment and materials needed for drilling operations would be trucked to the well site. Water for use in drilling wells in each pod would be obtained from the settling pond at the Cow Creek Unit tank battery. Approximately 3,000 barrels of water would be needed for drilling each well. Actual water volume used in drilling operations would be dependent upon the depth of the well and any losses that might occur during drilling. The proposed project would require approximately 3,000 barrels of water per well for cement preparation, well stimulation, and dust control. Drilling mud usually is native mud and bentonite. As hole conditions dictate, small amounts of polymer additives and/or potassium chloride salts may be added for hole cleaning and clay stabilization.

Each well would be drilled to a depth of 1,000 feet to 1,500 feet or deeper, and would have steel casing cemented from total well depth (TD) to the surface. The well control system would be designed to meet the conditions likely to be encountered in the hole and would be in conformance with BLM and State of Wyoming requirements. A completed CBM well bore is shown on Figure 2-3.

The drilling and completion operation for a CBM well normally requires approximately 10 to 15 people at a time, including personnel for logging and cementing activities. Each well would be drilled within a period of 5 to 7 days. A well completion program may be initiated to stimulate production of gas and to determine gas and water production characteristics in preparation for production of gas from a drilled, cased, and cemented well. A mobile completion rig similar to the drill rig may be transported to the well site, erected, and used to complete a well. Completion operations are expected to average 5 to 7 days per well. Methane gas may be vented and water temporarily discharged into the reserve pit or tanks for a very short period of time during testing to determine whether wells would be produced. Once determined to be productive, wells would be shut-in until pipelines and other production facilities are constructed.

It is anticipated that there would be a maximum of 3 to 5 small trailers on location on the well pad during drilling and completion operations. Upon conclusion of the operations, the trailers or other facilities would be removed from the site.

All unproductive wells would be plugged and abandoned as soon as practical after the conclusion of production testing. Productive wells may be shut-in temporarily for gas pipeline connection or for authorization from the Wyoming DEQ for temporary or permanent surface water discharge permits and/or approval of sundry notices by the BLM for production activities and facilities.



**Figure 2-3. Typical Completed CBM Well Bore.**

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### **2.1.2.4 Water Supply and Disposal**

Water for drilling the proposed wells would be obtained from the settling pond at the central delivery point (CDP) located in the NW1/4SE1/4 of Section 12, T16N, R92W. Water would be hauled by truck to the well locations over existing roads. Water volumes used in the drilling operations are dependent upon the depth of the well and the losses that might occur during drilling.

Cuttings and drilling fluids would be put in the reserve pit during drilling. A wire fence would be installed around the pit during drilling and after the drilling rig leaves. There would be no oil, salt water, or other noxious fluids produced during drilling and completion operations.

For the protection of livestock and wildlife, all pits containing toxic liquids would be fenced. For the protection of migrating waterfowl, these pits would be covered overhead with mesh netting during spring and fall migration times.

### **2.1.2.5 Waste Disposal**

All wastes that accumulate during the drilling operations would be contained in a trash cage that is fenced and completely enclosed with a fine wire mesh, and would be removed from the location and deposited in an approved sanitary landfill.

Immediately after removal of the drilling rig, all garbage and debris on the site would be removed from the site. The reserve pit would not be utilized for trash disposal. All state laws and regulations pertaining to containment and disposal of human waste would be complied with.

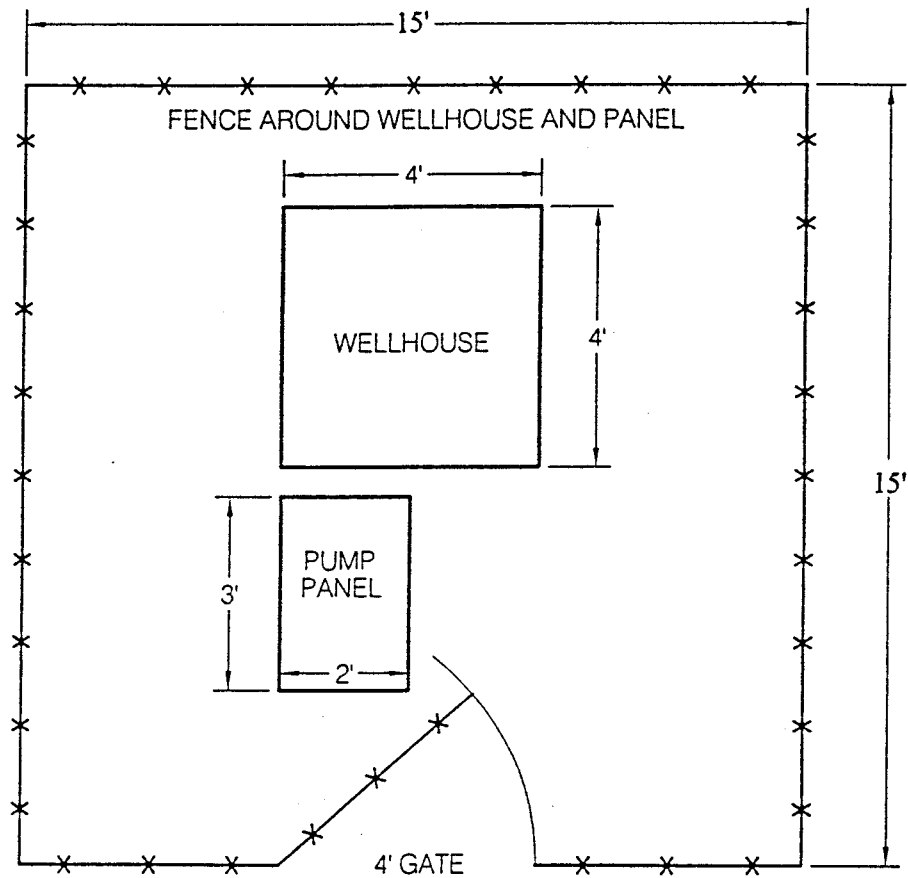
## **2.1.3 Production Operations**

### **2.1.3.1 Well Production Facilities**

Wellhead facilities would be installed if the CBM wells are productive. A weatherproof covering would be placed over the wellhead facilities. At this time, no additional facility would be constructed at the well site for gas-water separation facilities. A downhole pump would be utilized to produce water from the cased hole and perforated interval. Methane gas would flow to the surface using the space between the production casing and the water tubing. The long-term surface disturbance (10 to 15 years) at each productive well location where cut and fill construction techniques are utilized would encompass approximately 0.005 acre (15' x 15'; Figure 2-4). Well site production facilities typically would be fenced or otherwise removed from existing uses. A typical CBM production wellsite is shown on Figure 2-4.

At the conclusion of the project, roads, culverts, cattle guards, pipelines, stock watering facilities, or other structures could be left in place for any beneficial use as designated and approved by the BLM. Water wells and produced water would be available to the BLM, with appropriations, diversion, and storage rights already properly filed with the Wyoming State Engineer's Office (SEO). Ponds and reservoirs would continue to store water if the BLM elects to manage the wells and continue pumping water from them. All federally-owned surfaces that contain disturbed areas or facilities that are no longer needed would be reclaimed.

### TYPICAL CBM WELLSITE



NOT TO SCALE

Figure 2-4. Schematic of a Typical CBM Production Wellsite.

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### **2.1.3.2 Power Generation**

Electricity would be used to power downhole pumps during well development and to initiate and maintain production. Natural gas-fired generators would be used during the entire interim drilling period at the CDP. Electrical distribution lines would not be installed during the interim period, but likely would be buried during the 10-15-year LOP. Impacts associated with burial of electrical distribution lines would be analyzed in the Atlantic Rim CBM EIS currently under preparation. Either electrical motors or natural gas-fired reciprocating or micro turbine engines would power booster or blower units.

### **2.1.3.3 Pipelines**

Two buried pipelines and one buried power cable, each appropriate in length to travel the distance from each wellsite on the defined access routes to the CDP would be installed between the well location and the CDP. The pipelines and power cable would be installed in the same trench. Each trench would be 4 feet deep to prevent freezing of pipelines, which would be constructed of HDPE or steel pipe. One pipeline would transport the produced water and the other would transport gas.

All gas production and water production from Double Eagle wells would flow in underground pipelines to a CDP facility. The CDP would be located at the CCU #1X-12 wellsite at the NW1/4SE1/4 of Section 12, T16N:R92W. Once gas production enters the CDP it would be metered, compressed and sold into an existing third party gas sales tying beneath the CDP. Production water would enter the CDP and flow into an existing settling pond. From the pond, the water would be addressed in several ways as defined and approved by the Wyoming DEQ under the National Pollutant Discharge Elimination System (NPDES) permit. Water management is described in greater detail in Section 2.1.3.5, Produced Water Discharge.

A backhoe or small trencher would dig the pipeline trench(es) thus, surface disturbance would be minimized. Reclamation of pipeline corridors would occur as soon as practical after pipeline construction is completed.

#### **2.1.3.3.1 Gas-Gathering Pipeline Systems**

As part of the transportation corridor system linking the wells and ancillary facilities, gas-gathering pipelines and produced water-gathering pipelines would be constructed, placed together in the same trench/ditch, when practical, and buried. Construction and installation of pipelines would occur immediately after well drilling. Access roads typically would follow the pipeline ROW, except in a limited number of cases where topography dictates or as required by the BLM. Separate gathering lines would transport methane gas to production pod facilities and produced water away from wells to a settling pond.

Well gathering lines are expected to disturb portions of 30-foot wide corridors, and would transport gas from each compression station to a truckling.

Development would be constrained by the gas production from the coal seam(s) and by the pipeline capacity available to transport compressed gas to markets. Currently, the pipeline capacity within the project area is 10-20 million cubic feet per day (MMCFD), depending on the pipeline connecting locations.

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### **2.1.3.4 Compression**

Produced natural gas (methane) under wellhead pressure would move through the low pressure gas gathering system to a compressor station. Typical gathering system line pressure is less than 100 pounds per square inch (psi). Gas arriving at the compressor station would be compressed from line pressure to facilitate transport and introduction of the gas into an existing transmission pipeline.

Compression of the gas at a field compressor station would increase the pressure to an estimated 700 to 1,000 psi. One existing field compressor station contains a 200-HP engine. All compressors are expected to be housed within structures. A typical compressor station and meter facility is shown on Figure 2-5.

### **2.1.3.5 Produced Water Discharge**

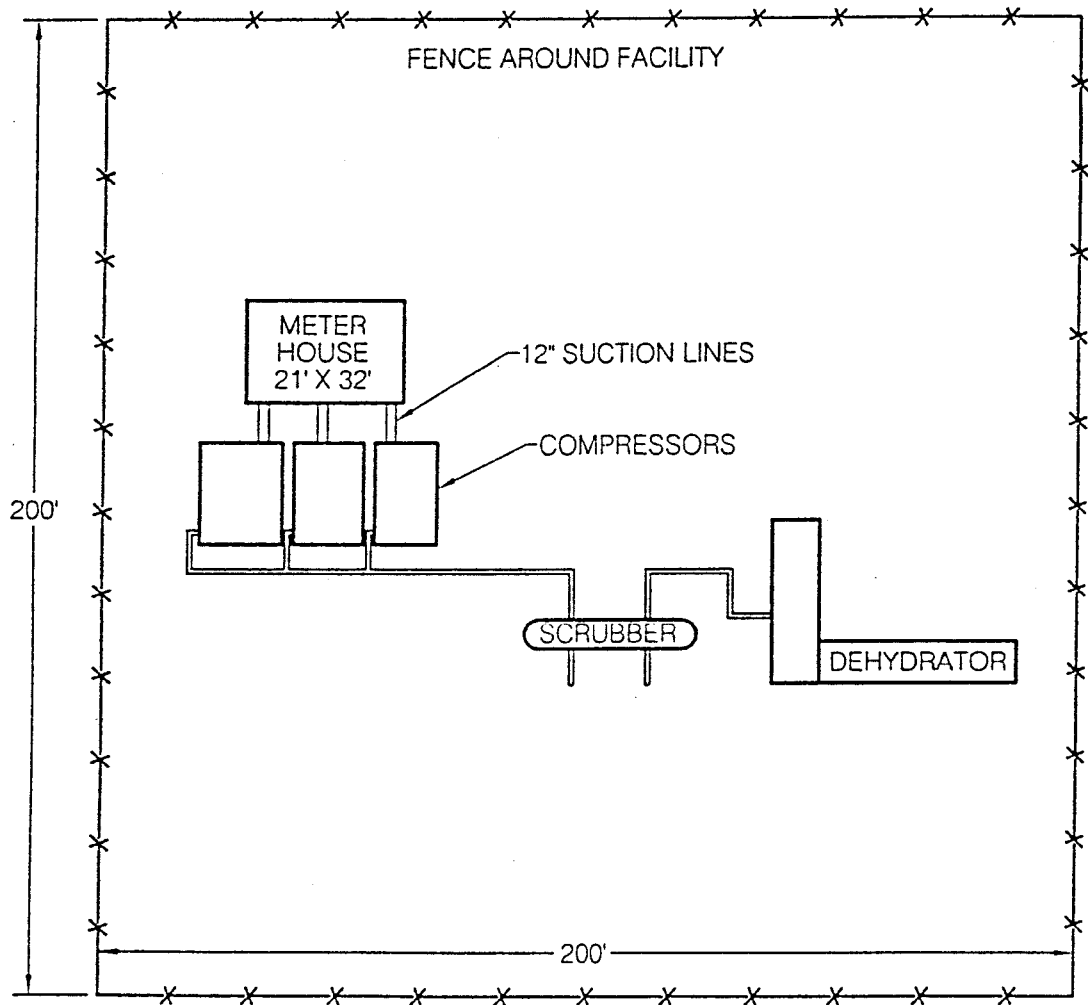
Prior to discharging any produced water on the surface, including temporary discharges, from the proposed wells, an NPDES permit or other applicable authorization from the Wyoming DEQ, and permits to appropriate ground water from the Wyoming SEO would be obtained. The quality of produced water is characterized on the NPDES permit application. After successfully completing a well, water monitoring would occur periodically as required by Wyoming DEQ.

Within 90 days of initial production, facilities/pits used for disposal of produced water will be applied for as outlined in Onshore Oil and Gas Order No. 7, via a Sundry Notice. Off-lease or unit disposal will require a sundry notice and right-of-way authorization.

Double Eagle has received an NPDES permit from the Wyoming DEQ to discharge CBM water from the project area. The requirements of this permit allow Double Eagle to discharge no more than 180,600 gallons of water and/or 1.34 tons of salt per day, into an ephemeral drainage, which eventually reaches an existing reservoir. This reservoir was constructed through a cooperative effort between National Fish and Wildlife Foundation, the Little Snake River Conservation District (LSRCD), the BLM, and the grazing permittee as a range improvement project to contain water which was being produced from a casing leak in an existing oil and gas well, the 1X-12. The water produced from CBM wells will be initially discharged to a low sloped channel that is rip-rapped at the discharge point. Calculated velocities of less than one ft/sec for the initial maximum allowable flow in the channel are below the erosion threshold for the fine-grained sediments in the channel. Initial water depths in the channel would be a few inches. Amounts in excess of 180,600 gallons per day (or 1.34 tons of salt per day) would be addressed in one or more of the following alternatives:

1. Construction of an off-channel reservoir facility west of the CDP. This structure would be approximately 280' x 400' with a maximum depth of 11 feet. The capacity of the pond would be 20 acre-feet covering 2.6 surface acres. The facility has been permitted by the Wyoming State Engineer and Wyoming DEQ.

## TYPICAL COMPRESSOR STATION & METER FACILITY



NOT TO SCALE

**Figure 2-5. Typical Compressor Station and Meter Facility.**

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2. Drill up to four wellbores as Aquifer Recharge Wells under WDEQ Chapter 16 rules as a Class 5B2 facility. The wells would be located approximately 500 feet northwest of the CCPA tank battery which is the CDP for all CBM water discharges. One of the aquifer recharge wells has been drilled and is located in the SENW of Section 12, T16N:R92W immediately west of an existing reservoir enclosure. All of these wells have been permitted by the Wyoming DEQ. Approximately 0.8 acres would be disturbed during the drilling of a recharge well; during operations, the disturbance would be reduced to 0.25 acres. DEQ, with primacy from EPA, has approved the permit for the recharge wells. Prior to injection, a sample of produced water and a sample of water from the receiving zone (Lewis sands) must be analyzed and meet the standards contained in the permit. Theoretically, only the one existing aquifer recharge well would be required with an injection rate of 200 gpm (6,857 bpd).
3. Recomplete a plugged and abandoned wellbore and explore it for use as a DEQ approved Class 5B2 recharge well or drill a new well to an appropriate depth. Appropriate permits would be obtained from WDEQ. Recompletion, if necessary, of a plugged and abandoned well would disturb approximately 0.8 acres.
4. Construction of an off-channel reservoir/evaporation facility west of the CDP. The size of the reservoir could reach approximately 80 acre-feet.
5. Construction of an off-channel reservoir/evaporation facility east of the CDP. The reservoir capacity would be 20 acre-feet. Dimensions would be similar to the off-channel reservoir in alternative 1. This alternative will probably not be required; if needed, further analysis will be provided at that time.

Three of the four aquifer recharge wells described in item 2, and items 4 and 5 above would not occur during the life of the interim drilling program. They would likely be required during the life of the project (LOP) which is estimated at 10 to 15 years. Impacts associated with the three additional off-channel reservoirs, the three additional aquifer recharge wells are not analyzed in this EA but will be analyzed in the Atlantic Rim CBM EIS currently being prepared.

Double Eagle estimates initial water production from each well would be 42,000 gallons per day (29 g.p.m.; 1,000 bpd; 0.65 cfs), and expects this rate to decrease by 30-50% each year. This decline rate is consistent with figures released by the WOGCC in April, 2000 for over 1,000 CBM wells in the Platte River Basin (PRB). A 50% annual decline would lower the initial 29 gpm per well to 7.3 gpm in two years. The Green River Basin (GRB) coals are thinner, less continuous and higher-pressured than the PRB coals. The GRB coals may decline differently, but their greater heterogeneity could result in a greater decline rate than seen in the PRB.

All water produced from the proposed wells would be piped into the small settling pond at the existing water discharge facility constructed at the CDP for the #1X-12 well located in the NWSE of Section 12. Water pipelines carrying the produced water would be constructed of HDPE pipe rated to carry low pressured water, and would discharge into a settling pond located at the #1X-12 tank battery. Up to 180,600 gallons per day would be allowed to enter an ephemeral drainage by discharging onto rip-rap rock to prevent erosion and would travel approximately ½ mile before entering the LSRCD reservoir. The LSRCD reservoir is located in the NW1/4 of Section 13 (T16N,R92W) approximately ½ mile south of the proposed wells/locations. The reservoir occupies 15.8 acres and has a capacity of 121 acre feet. The reservoir was constructed with 20,000 cubic yards of fill creating a dam height of 27 feet with a maximum depth of 23 feet.

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The balance of the CBM water above the 180,600 gpd discharge limit to the LSRCD reservoir would be piped to the aquifer recharge well and the associated off-channel reservoir. The water management strategy for the CCPA is total surface containment of the produced CBM water (i.e. no surface flow away from the project site). The strategy would use a combination of surface discharge to the LSRCD Reservoir, piped discharge to a new, off-channel reservoir and piped injection into an aquifer recharge well. Additional details can be found in the Water Management Plan (Appendix C).

Long-term CBM well water production data within the project area is not available. Indications from short-term tests on recently drilled CBM wells are that discharge rates would be highly variable. Due to the difference in coal depth and thickness, comparison with water production rates in the Powder River Basin may not be accurate. Until production testing can be conducted, an average life-of-project discharge rate of 8 gpm per well was assumed for this analysis. This value would vary within the project area and throughout the life of a well. Average production through the life of the well is expected to be less, but in order to present a conservative analysis, the larger value was used for the life of the project. This value is likely to vary from well to well and pod to pod, with the maximum value occurring at the onset of production and declining through the life of the project. Long-term average water production would not be expected to exceed an estimated 0.04 ac-ft/day/well (11,500 gpd or 8 gpm per well). Analyses from existing wells in the project area indicate that the total dissolved solid (TDS) concentrations of produced water would range from approximately 400 mg/l to 2,000 mg/l.

### **2.1.4 Ancillary Facilities**

The Proposed Action would utilize the existing ancillary facility infrastructure within the CCPA where possible, including water disposal facilities and gas gathering pipelines.

All wells, pipelines, and associated ancillary production facilities such as water wells and water treatment and disposal facilities would be operated in a safe manner by Double Eagle as set forth by standard industry operating procedures. Routine maintenance of producing wells would be necessary to maximize performance and detect potential difficulties with gas production operations. Each well location would be visited about every other day to ensure operations are proceeding in an efficient and safe manner. The visits would include checking separators, gauges, valves, fittings, and on-site storage of produced water and condensates. Routine on-site equipment maintenance would also be performed as necessary. Additionally, all roads and well locations would be regularly inspected and maintained to minimize erosion and assure safe operating conditions.

### **2.1.5 Geophysical Operations**

No additional geophysical operations are currently planned in the CCPA by Double Eagle.

### **2.1.6 Traffic Estimates and Work Force Loading Schedule**

Estimated traffic requirements for drilling, completion, and field development operations are shown in Table 2-1. The TRIP TYPE column lists the various service and supply vehicles that would travel to and from the well sites and production facilities. The ROUND TRIP FREQUENCY column lists the number of trips both external (i.e., to/from the pods), and internal (within the pod). The figures provided in Table 2-1 should be considered general estimates. Drilling and production activity levels may vary over time in response to weather and other factors.

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**Table 2-1. Traffic Estimates**

TRIP TYPE	ROUND TRIP FREQUENCY	
	External (to/from pod)	Internal (within pod)
<b>Drilling (2 rigs, 2 crews/rig)</b>		
Rig supervisor	4/day	same
Rig crews	4/day	same
Engineers <sup>a</sup>	2/week	1/day/rig
Mechanics	4/week	same
Supply delivery <sup>b</sup>	1/week	2-4/day
Water truck <sup>c</sup>	1/month	2 round trips/day
Fuel trucks	2 round trips/well	same
Mud trucks <sup>d</sup>	1/week	2/day
Rig move <sup>e</sup>	8 trucks/well	8 trucks/well
Drill bit/tool delivery	1 every 2 weeks	same
<b>Completion</b>		
Smeal rig/crew <sup>f</sup>	1/day	same
Cement crew	2 trips/well	same
Consultant	1/day	same
Well loggers	3 trips/well	same
<b>Gathering systems</b>	8/day	same
<b>Power systems</b>	2/day	same
<b>Compressor stations</b>	2/day	same
<b>Other field development</b>	3/day	same
<b>Testing and operations</b>	2/day	same
<b>Notes:</b> <sup>a</sup> Engineers travel to pod weekly and stay in a trailer in the pod during the week. <sup>b</sup> Current plans are to establish a central supply area within a pod and deliver supplies on a weekly basis. <sup>c</sup> Water trucks would deliver water to rigs from a location within the pod. <sup>d</sup> Current plans are to establish a central mud location within a pod and deliver mud on a weekly basis. <sup>e</sup> It would require 4 trucks to move each rig to a pod. Upon completion of drilling in a pod, each rig would move to the next pod. <sup>f</sup> Smeal rig is used in completion; one ton truck with a derrick and boom, used to change pumps.		

### 2.1.7 Site Restoration and Abandonment

Reclamation procedures whether the well is completed as a successful production well or as a dry hole:

1. Excavations on the drill site not needed for completion and production operations would be filled immediately upon release of the drilling rig from the location.

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2. All sides of the reserve pit would be fenced immediately upon release of the drilling rig from the location.
3. All garbage, trash and debris would be removed and properly disposed of in accordance with Section 2.1.2.5 of this EA.
4. The liquid contents of the reserve pit may be hauled to the next well to be immediately drilled or would be allowed to dry before backfilling, or pit fluids would be removed and disposed of in a manner approved by the Authorized Officer (AO) of the BLM before the reserve pit is backfilled.
5. All rehabilitation work, including seeding, would be completed as soon as possible, but no later than one (1) year of completion of the operation. The areas not needed for production purposes would be recontoured, topsoil respread and seeded utilizing the seed mixture provided by the surface management agency.

If the well is completed as a dry hole the following additional reclamation procedures would be followed:

6. Notice of Intent to Abandon and Subsequent Report of Abandonment would be submitted to BLM for approval. A Final Abandonment Notice would be submitted when the rehabilitation is complete and the new vegetation is established.
7. An above-ground tubular metal dry-hole marker would be erected over the drill-hole location upon cessation of drilling and/or testing operations. The marker would be inscribed with the operator's name, well number, well location (1/4 1/4 section, township, range, etc.) and federal lease number. Upon request of the surface management agency, the casing may be cut-off three (3) feet below reclaimed ground surface (or below plow depth) with a metal plate affixed to the top providing the same well information as stated above. This monument would consist of a piece of pipe not less than four inches in diameter and ten feet in length, of which four feet shall be above the general ground level and the remainder being imbedded in cement. The top of the pipe would be closed by a welded or screw cap cement, or other means.
8. All disturbed areas would be restored as nearly as possible to resemble the surrounding terrain. Topsoil would be respread and reseeding would be done according to the directions of the surface management agency. Care would be taken to prevent erosion.

If the well is completed as a producing well the following additional reclamation procedures would be followed:

1. Those disturbed areas not required for production operations would be recontoured to resemble surrounding terrain. No depressions would be left that trap water or form ponds.
2. The backslope and foreslope would be reduced to 2.5:1 by pulling fill material up from the foreslope and placing it into the toe of cut slopes.
3. If warranted, water bars at least one foot deep would be constructed on the contour with approximately two feet of drop per 100 feet of water bar to ensure drainage, and would be extended into established vegetation. All water bars would be constructed with a berm on

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the downhill side to prevent the soft material from silting in the trench. Water bar spacing on the location would be midway between the top and bottom of the backslope, and midway between the top and bottom of the foreslope.

4. Topsoil would be distributed evenly over those areas not required for production, and would be reseeded as recommended by the surface management agency.
5. To maintain quality and purity, certified seed would be weed-free with a minimum germination rate of 80% and a minimum purity of 90%, in a mix directed by the surface management agency.

New off-channel reservoirs may be left for use by the grazing lessee upon approval of the BLM.

### 2.1.8 Summary of Estimated Disturbances

The following Table 2-2 summarizes the estimated disturbances that would result with implementation of the CCPA CBM project.

**Table 2-2. Disturbance Estimates - Cow Creek Pod.**

Double Eagle - Cow Creek Pod				
Facility	Development Phase			Operations
	Length (feet)	Width (feet)	Acres	Acres
New Roads (includes gas and water ROW's)	12,025	40	11.0	5.52
Drill Pads (8)	180	200	6.6	0.04
Off-Channel Reservoir	400	280	2.6	2.6
<b>Total Disturbance</b>			<b>20.2</b>	<b>8.16</b>

### 2.1.9 Project-Wide Mitigation Measures and Procedures

Double Eagle proposes to implement the following mitigation measures, procedures, and management requirements on public lands to avoid or mitigate resource or other land use impacts. The following describes applicant-committed and agency required measures and procedures to avoid or mitigate resource or other land use impacts. An exception to a mitigation measure and/or design feature may be approved on public land on a case-by-case basis when deemed appropriate by the BLM. An exception would be approved only after a thorough, site-specific analysis determined that the resource or land use for which the measure was put in place is not present or would not be significantly impacted.

#### 2.1.9.1 Preconstruction Planning and Design Measures

1. Double Eagle and a BLM interdisciplinary group would make on-site inspections of each proposed and staked facility site (e.g., well sites), new access road, existing roads that will

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be upgraded, and pipeline alignment projects so that site-specific recommendations and mitigation measures can be developed.

2. New road construction and maintenance of existing roads in the CCPA and ARPA on federal lands would be accomplished in accordance with BLM Manual 9113 standards.
3. Prior to construction, Double Eagle would submit an MSUP for each pod. This plan would contain individual APD's for each drill site and Sundry Notices and/or ROW applications for pipeline and access roads. APD's submitted by Double Eagle would show the layout of the drill pad over the existing topography, dimensions of the pad, volumes and cross sections of the cut and fill (when required), location and dimensions of reserve pit(s), and access road egress and ingress. The MSUP would include itemization of project administration, time frame, and responsible parties.
4. Double Eagle would slope-stake construction activities when required by the BLM (e.g., steep and/or unstable slopes) and receive approval from the BLM prior to start of construction.

### 2.1.9.2 Resource-Specific Requirements

Double Eagle proposes to implement the following resource-specific mitigation measures, procedures, and management requirements on public lands.

#### 2.1.9.2.1 Range Resources and Other Land Uses

Mitigation requirements listed under Soils, Vegetation and Wetlands, and Wildlife also apply to Range Resources and Other Land Uses.

1. Double Eagle would coordinate with the affected livestock operators to ensure that livestock control structures remain functional during drilling and production operations.
2. The BLM would recommend that the operator establish speed limits in the CCPA.
3. The proponent should coordinate with affected livestock operators to minimize disruption during livestock operations, including calving season.

#### 2.1.9.2.2 Air Quality

1. All BLM conducted or authorized activities (including natural gas development alternatives) must comply with applicable local, state, tribal and Federal air quality regulations and standards. Double Eagle would adhere to all applicable ambient air quality standards, permit requirements (including preconstruction, testing, and operating permits), motorized equipment and other regulations, as required by the State of Wyoming, Department of Environmental Quality, Air Quality Division (WDEQ-AQD).
2. Double Eagle would not allow burning garbage or refuse at well locations or other facilities. Any other open burning would be conducted under the permitting provisions of Section 13 of the Wyoming Air Quality Standards and Regulations.

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3. Double Eagle would initiate immediate abatement of fugitive dust (by application of water, chemical dust suppressants, or other measures) when air quality, soil loss, or safety concerns are identified by the BLM or the WDEQ-AQD. These concerns include, but are not limited to, potential exceedances of applicable air quality standards. The BLM would approve the control measure, location, and application rates. If watering is the approved control measure, the operator must obtain the water from state-approved source(s).
4. If air quality analyses indicate exceedances in NO<sub>x</sub>, the following types of control measures could be implemented: the reduction of compression requirements, electric compression or the use of nonselective catalytic reduction (NCR), lean combustion, or selective catalytic reduction (SCR) control technologies. Currently, these levels are below required levels and the likelihood of requiring these measures is small.

### **2.1.9.2.3 Transportation**

1. Existing roads would be used as collectors and local roads whenever possible. Standards for road design should be consistent with BLM Road Standards Manual Section 9113.
2. Roads not required for routine operation and maintenance of producing wells and ancillary facilities would be permanently blocked, reclaimed, and revegetated.
3. Areas with important resource values, steep slopes and fragile soils should be avoided where possible in planning for new roads.
4. Permits are required from Carbon County for any road access to or across a county road or for any pipeline crossing of a county road. These permits would be acquired prior to construction of additional roads. All roads on public lands which are not required for operation and maintenance of field production should be permanently blocked, re-contoured and reseeded. Roads on private lands should be treated similarly depending on the desires of the land owner.
5. The Proponent would be responsible for preventive and corrective maintenance of roads in the project area throughout the duration of the project. This may include balding, cleaning ditches and drainage facilities, dust abatement, noxious weed control, or other requirements as directed by the BLM or the Carbon County Road and Bridge Department.
6. Except in emergency situations, access would be limited to drier conditions to prevent severe rutting of the road surface. Culverts would be installed where needed to allow drainage in all draws and natural drainage areas. Low water crossings would be utilized where applicable. Onsite reviews would be conducted with BLM personnel for approval of proposed access prior to any construction.

### **2.1.9.2.4 Minerals/Paleontology**

Mitigation measures presented in the Soils and Water Resources sections of this EA would avoid or minimize many of the potential impacts to the surface mineral resources. Protection of subsurface mineral resources from adverse impacts would be provided by the BLM, WDEQ, and WOGCC casing and cementing policy.

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Paleontological resource values would be protected through the following mitigation measure:

1. If recommended by the BLM, each proposed facility located in areas with known and potential vertebrate paleontological resource significance) would be surveyed by a BLM-approved paleontologist prior to surface disturbance (USDI-BLM 1987, 1990).
2. Discovery Contingency. Contingency should be made for the accidental discovery of significant fossils by project personnel. If fossils are discovered by construction personnel during implementation of the project the BLM would be notified immediately. If the fossils could be adversely affected by construction, construction activities would halt until a qualified paleontologist has determined the importance of the uncovered fossils and the extent of the fossiliferous deposits and made and implemented recommendations regarding further mitigation.
3. Field Survey. No specific data currently exists on deposits of high and undetermined paleontologic potential in CCPA. For that reason field survey for paleontologic resources would be conducted on a case by case basis, as directed by the BLM, in areas in which surface exposures of the Browns Park, Green River, and Wasatch formations crop out. Field survey may result in the identification of additional mitigation measures to lessen adverse impacts to fossil resources. This mitigation may include collection of additional data and fossil material, obtaining representative samples of fossil material, by monitoring excavation; or by avoidance. In some cases no action beyond that conducted during the field survey may be necessary.

### 2.1.9.2.5 Soils

1. Reduce the area of disturbance to the absolute minimum necessary for construction and production operations while providing for the safety of the operation.
2. Where feasible, locate pipelines immediately adjacent to roads to avoid creating separate areas of disturbance and in order to reduce the total area of disturbance.
3. Avoid using frozen or saturated soils as construction material.
4. Minimize construction activities in areas of steep slopes.
5. Design cut slopes in a manner that would allow retention of topsoil, surface treatment such as mulch, and subsequent revegetation.
6. Selectively strip and salvage topsoil or the best suitable medium for plant growth from all disturbed areas to a minimum depth of 6 inches on all well pads.
7. Where possible, minimize disturbance to vegetated cuts and fills on existing roads that are improved.
8. Install runoff and erosion control measures such as water bars, berms, and interceptor ditches if needed.
9. Install culverts for ephemeral and intermittent drainage crossings. Design all drainage crossings to carry the 25-year discharge event, or as otherwise directed by the BLM.

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10. Implement minor routing variations during access road layout to avoid steep slopes adjacent to ephemeral or intermittent drainage channels. Maintain a 100-foot wide buffer strip of natural vegetation where possible (not including wetland vegetation) between all construction activities and ephemeral and intermittent drainage channels.
11. Include adequate drainage control devices and measures in the road design (e.g., road terms and drainage ditches, diversion ditches, cross drains, culverts, out-sloping, and energy dissipater) at sufficient intervals and intensities to adequately control and direct surface runoff above, below, and within the road environment to avoid erosive concentrated flows. In conjunction with surface runoff or drainage control measures, use erosion control devices and measures such as temporary barriers, ditch blocks, erosion stops, mattes, mulches, and vegetative covers. Implement a revegetation program as soon as possible to re-establish the soil protection afforded by a vegetal cover.
12. Upon completion of construction activities, restore topography to near pre-existing contours at the well sites, along access roads and pipelines, and other facilities sites; replace up to 12 inches of topsoil or suitable plant growth material over all disturbed surfaces; apply fertilizer as required; seed; and mulch.

### **2.1.9.2.6 Water Resources**

Other mitigation measures listed in the Soils, and Vegetation and Wetlands sections of this EA would also apply to Water Resources.

1. Limit construction of drainage crossings to no-flow periods for ephemeral or intermittent drainages and low-flow for perennial drainages.
2. Minimize the area of disturbance within perennial, ephemeral and intermittent drainage channel environments.
3. Prohibit construction of well sites, access roads, and pipelines within 500 feet of surface water and/or riparian areas. Possible exceptions to this would be granted by the BLM based on an environmental analysis and site-specific mitigation plans.
4. Design channel crossings to minimize changes in channel geometry and subsequent changes in flow hydraulics.
5. Maintain vegetation barriers occurring between construction activities and ephemeral and intermittent channels.
6. Design and construct interception ditches, sediment traps/silt fences, water bars, silt fences and revegetation and soil stabilization measures if needed.
7. Construct channel crossings by pipelines such that the pipe is buried a minimum of four feet below the channel bottom.
8. Regrade disturbed channel beds to the original geometric configuration and the same or very similar bed material replaced.
9. Case wells during drilling, and case and cement all wells in accordance with Onshore Order No. 2 to protect all high quality water aquifers. High quality water aquifers are aquifers with

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known water quality of 10,000 TDS or less. Include well casing and welding of sufficient integrity to contain all fluids under high pressure during drilling and well completion. Further, wells would adhere to the appropriate BLM cementing policy.

10. Construct the reserve pits in cut rather than fill materials or compact and stabilize fill. Inspect the subsoil material of the pit to be constructed in order to assess soil stability and permeability and whether reinforcement and/or lining are required. If lining is required, line the reserve pit with a reinforced synthetic liner at least 12 mils in thickness and a bursting strength of 175 x 175 pounds per inch (ASTMD 75179). Consideration should be given to use of closed or semi-closed drilling systems in situations where a liner may be required.
11. Maintain two feet of freeboard on all reserve pits to ensure the reserve pits are not in danger of overflowing. Shut down drilling operations until the problem is corrected if leakage is found outside the pit.
12. Extract hydrostatic test water used in conjunction with pipeline testing and all water used during construction activities from sources with sufficient quantities and through appropriation permits approved by the State of Wyoming.
13. Discharge all concentrated water flows within access road ROW's onto or through an energy dissipater structure (e.g., riprapped aprons and discharge points) and discharge into undisturbed vegetation.
14. Develop and implement a pollution prevention plan (PPP) for storm water runoff at drill sites as required per WDEQ storm water NPDES permit requirements. All required WDEQ permits will be in place prior to discharge.
15. Exercise stringent precautions against pipeline breaks and other potential accidental discharges of toxic chemicals into adjacent streams. If liquid petroleum products are stored on-site in sufficient quantities (per criteria contained in 40 CFR Part 112), a Spill Prevention Control and Countermeasures (SPCC) plan would be developed in accordance with 40 CFR Part 112, dated December 1973.
16. Coordinate all crossings or encroachments of waters of the U.S. with the U.S. Army Corps of Engineers (COE).
17. Any changes in the produced water disposal method or location must have written approval from the BLM before the changes take place.

### **2.1.9.2.7 Fisheries**

1. No fisheries mitigation is needed beyond that indicated under Water Resources and Special Status Species Fish.

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### **2.1.9.2.8 Vegetation and Wetlands**

Other mitigation measures under Soils and Water Resources would also apply to vegetation and wetlands.

1. File noxious weed monitoring forms with the BLM and implement, if necessary, a weed control and eradication program.
2. Evaluate all project facility sites for occurrence and distribution of waters of the U.S., special aquatic sites, and jurisdictional wetlands. All project facilities would be located out of these sensitive areas. If complete avoidance is not possible, minimize impacts through modification and minor relocations. Coordinate activities that involve dredge or fill into wetlands with the COE.
3. On BLM lands, an approved Pesticide Use Proposal would be obtained before the application of herbicides or other pesticides for the control of noxious weeds.
4. Disturbed areas would be seeded and stabilized in accordance with BLM-approved reclamation guidelines.

### **2.1.9.2.9 Wildlife**

1. During reclamation, establish a variety of forage species that are useful to native and resident herbivores.
2. Prohibit unnecessary off-site activities of operational personnel in the vicinity of the drill sites. Inform all project employees of applicable wildlife laws and penalties associated with unlawful take and harassment.
3. Limit construction activities as per BLM authorizations within big game crucial winter range from November 15 to April 30.
4. Complete a raptor survey of the CCPA prior to construction to ensure that well sites are located away from potential conflict areas.
5. Survey and clear well sites within one mile of raptor nests identified in the raptor survey prior to the commencement of drilling and construction during the raptor nesting period (February 1 through July 31).
6. When an active raptor nest is located 0.75 to one mile (depending on species and line of sight) of a proposed well site, construction activities will be restricted during the critical nesting season for that species. For listed and BLM sensitive species the distance should be increased to within one mile of a proposed well site.
7. Do not perform construction activities within 0.25 mile of existing greater sage grouse leks.
8. Provide for greater sage grouse lek protection during the breeding, egg-laying and incubation period (March 1 - June 30) by restricting construction activities within a two-mile radius of active greater sage grouse leks. Exceptions may be granted if the activity would occur in unsuitable nesting habitat.

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9. To eliminate any hazard to migratory birds or other wildlife, BLM would require netting (maximum 2 inch mesh) be installed over any pits identified as containing oil or toxic substances.
10. Require that regular drivers undergo training describing the types of wildlife in the area that are susceptible to vehicular collisions, the circumstances under which such collisions are likely to occur, and the measures that can be employed to minimize them.

### **2.1.9.2.10 Special Status Species**

#### **Special Status Plants**

1. Employ site-specific recommendations developed by the BLM IDT for staked facilities.
2. Minimize impacts due to clearing and soil handling.
3. Monitor and control noxious weeds.
4. Comply with Section 404(b)(1) guidelines of the federal Clean Water Act (CWA).
5. Perform clearance surveys for plant species of concern.

#### **Special Status Animals**

1. Implement measures discussed in Chapter 4 in compliance with the Endangered Species Act (ESA).
2. Prior to production of waters associated with CBM production in the CCPA, the proponent agrees to collect water data to determine if water from the Mesaverde Formation is connected to surface waters associated with the Colorado River System. Results of this analysis will be submitted to USFWS and BLM. If data indicates that there is a connectivity between the waters produced concurrent with CBM production and the Colorado River Basin system, and that the project will result in depletions, formal consultation will be initiated with USFWS. Should this test indicate that depletions of the Colorado River system will occur from the implementation of this project, discharge from CBM wells will not be allowed until concurrence with these results is received by the BLM and USFWS.
3. Crossings of any streams having potential to support sensitive fish species will be designed to allow migratory passage following methods identified by Watts (1974). In addition, any stream crossings of the downstream section of Muddy Creek, constructed to access the project area, would be located and constructed to ensure passage for upstream spawning in migrations of these sensitive native fishes. All crossing construction will be limited to no-flow periods for ephemeral or intermittent drainage to low-flow periods for perennial streams. Additionally, crossing designs will be approved by a BLM fishery biologist prior to installation.

### **2.1.9.2.11 Visual Resources**

1. Paint well and central facilities site structures with flat colors (e.g., Carlsbad Canyon or Desert Brown) that blend with the adjacent surrounding undisturbed terrain, except for

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structures that require safety coloration in accordance with Occupational Safety and Health Administration (OSHA) requirements.

2. Utilize existing topography to screen roads, pipeline corridors, drill rigs, well heads, and production facilities from view.
3. Roads will follow contours or vegetation whenever possible to blend with the environment. Tops of facilities will be kept below ridge lines as seen from roads.

### **2.1.9.2.12 Noise**

1. Muffle and maintain all motorized equipment according to manufacturers' specifications.
2. In any area of operations (drill site, compressor site, etc.) where noise levels may exceed federal OSHA safe limits, Double Eagle would provide and require the use of proper personnel protective equipment by employees.
3. The BLM may require that noise levels be limited to no more than 10 dBA above background levels at greater sage grouse leks and other sensitive resource areas. In order to comply with the above noise level limits, the BLM may require compressor engines to be enclosed in a building and located at least 600 feet away from sensitive receptors or sensitive resource areas (1999b).

### **2.1.9.2.13 Recreation**

Measures under Wildlife, Transportation, Soils, Health and Safety, and Water Resources of this EA apply to Recreation.

1. Minimize conflicts between project vehicles and equipment and recreation traffic by posting appropriate warning signs, implementing operator safety training, and requiring project vehicles to adhere to low speed limits.

### **2.1.9.2.14 Socioeconomic**

1. Implement hiring policies that would encourage the use of local or regional workers who would not have to relocate to the area.
2. Coordinate project activities with ranching operations to minimize conflicts involving livestock movement or other ranch operations. This would include scheduling of project activities to minimize potential disturbance of large-scale livestock movements. Establish effective and frequent communication with affected ranchers to monitor and correct problems and coordinate scheduling.
3. Double Eagle and its subcontractors would obtain Carbon County sales and use tax licenses for purchases made in conjunction with the project so that project-related sales and use tax revenues would be distributed to Carbon County.

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### **2.1.9.2.15 Cultural Resources**

1. If a site is considered eligible for, or is already on the National Register of Historic Places (NRHP), avoidance is the preferred method for mitigating adverse effects to that property.
2. Mitigation of adverse effects to cultural/historical properties that cannot be avoided would be accomplished by the preparation of a cultural resources mitigation plan.
3. If cultural resources are discovered at any time during construction, all construction activities would halt and the BLM AO would be immediately notified. Work would not resume until a Notice to Proceed is issued by the BLM AO.

### **2.1.9.2.16 Health and Safety**

Measures listed under Air Quality and Water Quality also apply to Health and Safety.

1. Sanitation facilities installed on the drill sites and any resident camp site locations would be approved by the WDEQ.
2. To minimize undue exposure to hazardous situations, the operator will comply with all existing applicable rules and regulations (i.e., Onshore Orders, OSHA requirements, etc.) that would preclude the public from entering hazardous areas and place warning signs alerting the public of truck traffic.
3. Haul all garbage and rubbish from the drill site to a State-approved sanitary landfill for disposal. Collect and store any garbage or refuse materials on location prior to transport in containers approved by the BLM
4. During construction and upon commencement of production operations, Double Eagle would have a chemical or hazardous substance inventory for all such items that may be at the site. Double Eagle would institute a Hazard Communication Program for its employees and would require subcontractor programs in accordance with OSHA 29 CFR 1910.1200. These programs are designed to educate and protect the employees and subcontractors with respect to any chemicals or hazardous substances that may be present in the work place. It would be required that as every chemical or hazardous material is brought on location, a Material Safety Data Sheet (MSDS) would accompany that material and would become part of the file kept at the drilling location field office as required by 29 CFR 1910.1200. All employees would receive the proper training in storage, handling, and disposal of hazardous substances.
5. Spill Prevention Control and Countermeasure Plans would be written and implemented as necessary in accordance with 40 CFR Part 112 to prevent discharge into navigable waters of the United States.
6. Chemical and hazardous materials would be inventoried and reported in accordance with the Superfund Amendments and Reauthorization Act (SARA) Title III. 40 CFR Part 335, if quantities exceeding 10,000 pounds or the threshold planning quantity (TPQ) are to be produced or stored in association with the Proposed Action. The appropriate Section 311 and 312 forms would be submitted at the required times to the State and County Emergency Management Coordinators and the local fire departments.

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7. Any hazardous wastes, as defined by the Resource Conservation and Recovery Act (RCRA), would be transported and/or disposed of in accordance with all applicable federal, state, and local regulations.

### **2.2 ALTERNATIVE A - NO ACTION**

Section 1502.14(d) of the NEPA requires that the alternatives analysis "include the alternative of no action". "No Action" implies that on-going natural gas production activities would be allowed to continue by the BLM in the CCPA, but the proposed field development program (Proposed Action) would be disallowed. Disturbances associated with the existing LSRCR reservoir (15.8 acres), two existing oil and gas wells (X1-12 and 34-12) that have been completed as CBM wells (8.9 acres), and the four recently approved CBM wells, aquifer recharge well, and associated facilities (22.0 acres) will be considered under the No Action Alternative. Additional APD's and ROW actions would be considered by the BLM for federal land on a case-by-case basis consistent with the scope of existing environmental analysis. Transport of natural gas products would be allowed from those wells within the CCPA that are currently productive. Additional gas development could occur on private lands within the project area under APD's approved by the WOGCC.

The U.S. Department of the Interior's (USDI) authority to implement a "No Action" alternative is limited because the public lands have already been leased. An explanation of this limitation and the discretion the USDI has in this regard follows.

An oil and gas lease grants the lessee the "right and privilege to drill for, mine, extract, remove and dispose of all oil and gas deposits" in the leased lands, subject to the terms and conditions incorporated in the lease (Form 3110-2). Because the Secretary of the Interior has the authority and responsibility to protect the environment within federal oil and gas leases, restrictions are imposed on the lease terms.

Leases within the CCPA contain various stipulations concerning surface disturbance, surface occupancy and limited surface use. In addition, the lease stipulations provide that the USDI may impose "such reasonable conditions, not inconsistent with the purposes for which [the] lease is issued, as the [BLM] may require to protect the surface of the leased lands and the environment." None of the stipulations, however, would empower the Secretary of the Interior to deny all drilling activity because of environmental concerns.

Provisions in leases that expressly provide Secretarial authority to deny or restrict APD development in whole or in part would depend on an opinion provided by the U.S. Fish and Wildlife Service (FWS) regarding impacts to endangered or threatened species or habitats of plants or animals that are listed or proposed for listing (e.g., bald eagle). If the FWS concludes that the Proposed Action and alternatives would likely jeopardize the continued existence of any endangered or threatened plant or animal species, then the APD(s) and Atlantic Rim development may be denied in whole or in part.